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One-Way Entangled-Photon Autocompensating Quantum Cryptography

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abstract A new quantum cryptography implementation is presented that uses entanglement to combine one-way operation with an autocompensating feature that has hitherto only been available in implementations that require the signal to make a round trip between the users. Using the concept of advanced waves, it is shown that this new implementation is related to the round-trip implementation in the same way that Ekert's two-particle scheme is related to the original one-particle scheme of Bennett and Brassard. The practical advantages and disadvantages of the proposed implementation are discussed in the context of existing schemes.